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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,713	01/17/2007	Naohide Wakita	061352-0129	3396

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MCDERMOTT WILL & EMERY LLP  
600 13TH STREET, NW  
WASHINGTON, DC 20005-3096

EXAMINER
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STARK, JARRETT J

ART UNIT	PAPER NUMBER
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2823

MAIL DATE	DELIVERY MODE
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05/19/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,713	<b>Applicant(s)</b> WAKITA, NAOHIDE	
	<b>Examiner</b> JARRETT J. STARK	<b>Art Unit</b> 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/10/2006; 01/17/2007</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-5 and 9-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Lieber et al. (WO 03/005450 A2) in view of Yang et al. (US 2004/0175844 A1).**

**Regarding claims 1, 9, 10, 11, 12 and 9, Lieber discloses a method of orienting an electronic functional material, the method comprising:**

a mixed material preparation step of preparing a mixed material from an electronic functional material and a matrix material used for orientating the electronic functional material; an orientation step of orientating the mixed material; and a matrix material removal step of removing the matrix material from the mixed material which has been oriented (Lieber et al. entire document (see 371 documents filed 5/10/2006 titled "Translation of Reply."))

In the translated 371 document Applicant's admit that Lieber discloses the claimed limitations however is silent upon wherein, in the matrix material removal step, the matrix material is removed by at least either heating or etching.

At the time of the invention it was known in the art that matrix materials used for orienting the electronic functional material was capable of being removed by etching. Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to select a known appropriate method to achieve the disclosed results. An explicit example of removing a matrix material by etching is disclosed by Yang et al. in paragraph [0104].

It would have been within the scope of one of ordinary skill in the art at the time of the invention to combine the teachings of Lieber and Yang to enable the removing step of Lieber to be performed according to the teachings of Yang because one of ordinary skill in the art would have been motivated to look to alternative suitable methods of performing the disclosed removing step of Lieber and art recognized suitability for an intended purpose has been recognized to be motivation to combine. MPEP § 2144.07.

**Regarding claim 2,** Lieber in of Yang disclose the method of orienting an electronic functional material according to claim 1, wherein the electronic functional material contains an organic semiconductor compound (Lieber, ¶[0221]).

**Regarding claim 3,** Lieber in of Yang disclose the method of orienting an electronic functional material according to claim 1, wherein the electronic functional material contains nanotubes (Lieber, ¶[0221]).

**Regarding claim 4,** Lieber in of Yang disclose the method of orienting an electronic functional material according to claim 1, wherein the mixed material preparation step includes a mixed material layer formation step of forming a mixed material layer containing the mixed material (Lieber, ¶[0221]).

**Regarding claim 5,** Lieber in of Yang disclose the method of orienting an electronic functional material according to claim 1, wherein, in the orientation step, the mixed material is oriented by at least either drawing or shear deformation (Lieber, ¶[0008]).

**Regarding claim 13,** Lieber in of Yang disclose the method of orienting an electronic functional material according to claim 2, wherein the organic semiconductor compound is selected from the group consisting of pentacene, tetracene, thiophene oligomer derivatives, phenylene derivatives, phthalocyanine compounds, polyacetylene derivatives, polythiophene derivatives and cyanine dye (Lieber, ¶[0221]).

**Regarding claim 14,** Lieber in of Yang disclose the method of orienting an electronic functional material according to claim 1, wherein, in the orientation step, the

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mixed material is oriented by liquid crystal orientation (*Orienting a material in a polymeric material matrix is the implicit basis of how LCD orientation works, therefore the process of disclosed by Lieber meets the limitation*).

**Regarding claim 15,** Lieber in of Yang disclose the method of orienting an electronic functional material according to claim 1, wherein, in the matrix material removal step, the matrix material is removed through sublimation (Yang et al. in paragraph [0104] – i.e. dry etching).

**Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lieber et al. (WO 03/005450 A2) in view of Yang et al. (US 2004/0175844 A1) in further supporting view of Goldberg et al. (US 5,503,698).**

**Regarding claims 7 and 8,** Lieber in of Yang disclose the method of orienting an electronic functional material according to claim 1, wherein the matrix material contains a heat developable type resist material (i.e. polyphthalaldehyde base material), however it would have been obvious to one having ordinary skill in the art at the time the invention was made to polyphthalaldehyde base material, since it has been held to be within the general skill of a worker in the art to select a known material on the base of its suitability, for its intended use involves only ordinary skill in the art. *In re Leshin*, 125 USPQ 416.

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For support see Goldberg et al. Col. 6 lines 10-15. Goldberg disclose that polyphthalaldehyde is a known “polymeric matrix” material. Therefore it would be obvious to one of ordinary skill in the art to select polyphthalaldehyde for the polymeric matrix material disclosed by Lieber.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JARRETT J. STARK whose telephone number is (571)272-6005. The examiner can normally be reached on Monday - Thursday 7:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jarrett J Stark/  
Examiner, Art Unit 2823

5/16/2009  
/J. J. S./  
Examiner, Art Unit 2823